

KRESTOVNIKOV, A.N.; VIGDOROVICH, V.N.

Experiments demonstrating the basic laws of chemical reaction velocities. Khim.v shkole 14 no.3:72-74 My-Je '59.
(MIRA 12:9)

1. Institut tsvetnykh metallov i zolota im. Kalinina, g.Moskva.
(Chemistry--Experiments) (Chemistry--Study and teaching)
(Chemical reaction, Rate of)

5(4), 18(7)

AUTHORS:

Krestovnikov, A. N., Vigdorovich, V. N. (Moscow)

SOV/76-33-1-13/45

TITLE:

On the Theory of the Formation of Solid Solutions of Metallic Systems (K teorii obrazovaniya tverdykh rastvorov metalliches-kikh sistem)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 78-82 (USSR)

ABSTRACT:

Analyses of the phase diagrams of metallic systems which are found in various publications show that, in most cases, the heat resistance of the basic component decreases with the addition of a second component. As these investigations will be continued, the number of cases in which an increase in the heat resistance of the basic component can be observed will mount. A table with 68 examples of metallic systems is given in which, by adding a metal component to the already existing one, an increase in the heat resistance occurs. In order to evaluate the observations made, the electron-structure was investigated and thus found that an increase in the heat resistance of common metals at the dissolution of common or transition metals in them can be expected only at negative values of the spatial factor. This applies to elements with a

Card 1/2

SOV/76-33-1-13/45

On the Theory of the Formation of Solid Solutions of Metallic Systems

crystal lattice of the covalent type. Under certain conditions, however, an increase in the heat resistance can occur also at positive values of the spatial factor. A stable temperature resistance of the solid metallic solutions which should form because of the interatomic binding forces between the components is not to be expected. From the experimental material which was collected and systematized 2 patterns are mentioned in which an increase of the heat resistance of the solid solutions is to be expected. There is 1 table.

ASSOCIATION: Institut tsvetnykh metallov i zolota im. M. I. Kalinina
(Institute for Non-Ferrous Metals and Gold imeni M. I. Kalinin)

SUBMITTED: June 16, 1957

Card 2/2

KRESTOVNIKOV, A. N.

PHASE I BOOK EXPLOITATION

SOV/3640

Gerasimov, Yakov Ivanovich, Aleksandr Nikolayevich Krestovnikov, and
Aleksy Sergeyevich Shakhov

Khimicheskaya termodinamika v tsvetnoy metallurgii. t. 1: Teoreticheskiye vvedeniye. Termodinamicheskiye svoystva vazhneyshikh gazov. Termodinamika tsinka i yego vazhneyshikh soyedineniy; spravochnoye rukovodstvo (Chemical Thermodynamics in Nonferrous Metallurgy. Vol. 1: Theoretical Introduction, Thermodynamic Properties of the More Important Gases. Thermodynamics of Zinc and Its More Important Compounds; Manual) Moscow, Metallurgizdat, 1960. 230 p. Errata slip inserted. 5,100 copies printed.

Compiler: M.S. Vendrikh, Candidate of Technical Sciences; Reviewers: K.V. Astakhov, Doctor of Chemical Sciences, Professor, and N.V. Gudima, Docent; Ed.: O.M. Kamayeva; Tech. Ed.: V.V. Mikhaylova.

PURPOSE: This book is intended for engineers, scientific workers, and students in advanced courses at schools of higher technical education.

Card 1/5

Chemical Thermodynamics (Cont.)

SOV/3640

COVERAGE: This book is the first in a series of eight on the thermodynamic properties of nonferrous and rare metals, as well as their principal compounds (oxides, sulfides, chlorides, sulfates, and carbonates). This volume contains basic data on the principles of chemical thermodynamics, methods of calculating thermodynamic magnitudes, reference data on the thermodynamic properties of the more important gaseous participants in pyrometallurgical reactions, and data on the thermodynamic properties of zinc and its principal compounds. A basic bibliography of 75 publications on chemical thermodynamics and its application to metallurgical processes and metallography is included. No personalities are mentioned. There are 423 references: 51 Soviet, 171 English, 140 German, 30 French, 12 Japanese, 9 Italian, 4 Dutch, 2 Belgian, 1 Swiss, 1 Finnish, 1 Romanian, and 1 Norwegian.

TABLE OF CONTENTS:

Preface	3
Accepted Symbols of the More Important Values	5
Card 2/5	

85804

15.2220

1411, 1439, 1043, 1273

S/148/60/000/003/001/018

A161/A029

AUTHORS: Krestovnikov, A.N.; Vendrikh, M.S.

TITLE: Thermodynamics of Chrome Diboride²¹

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. - Chernaya metallurgiya, 1960, No. 3, pp. 13 - 16

TEXT: The effective heat absorbing capacity of Cr and B in CrB_2 was calculated separately using Lindemann's formula for finding the natural vibration frequencies of Cr and B atoms; Debye function tables were used for calculating the atomic heat absorbing capacity of Cr and B and the isochoric heat absorbing capacities found for CrB_2 in accordance with Neumann's and Kopp's law, and the isochoric capacities were converted into isobaric ones using the Nernst equation. The calculated heat absorbing capacities were compared with values determined by the authors in experiments with a water calorimeter. The calorimeter has been described previously (Ref. 1). The values found per Debye and as measured coincided in the studied temperature interval (300 - 800°K) but differed considerably at higher temperature, which can be explained by an additional heat effect and must be yet experimentally proven. It is supposed that the real heat absorbing

Card 1/3

858a4

Thermodynamics of Chrome Diboride

S/148/60/000/003/001/018
A161/A029

capacity curve for CrB_2 corresponds to a second order parabola with slight curvature. The values for deep and low temperatures (23 - 300°K) were calculated per Debye and extrapolated further to absolute zero by the $C_p/T - f(T)$ curve, and the standard entropy of CrB_2 found to be $S^\circ_{298} = 9.32 \text{ cal/mol. degr.}$, and the entropies of chrome, boron, chrome diboride, and of CrB_2 were calculated. These data were used for finding the formation entropy of CrB_2 . The standard formation heat of CrB_2 (formation enthalpy, ΔH) having been found widely different by different authors (varying from 19.00 kcal/mole per G.V. Samsonov (Ref. 3) to 47.00 per O. Kubashevskiy and E. Evans (Ref. 5) the value 30.00 kcal/mol has been accepted for calculations, and the equation of the dependence of ΔH°_f on temperature was found: $\Delta H^\circ_f = 29845 - 0.622T + 2.005 \cdot 10^{-3}T^2 - 0.44 \cdot 10^{-5}T^{-1}$. Taking the CrB_2 formation heat and entropy, its free energy (isobaric potential) was calculated (Table 5):

Card 2/3

85804

S/148/60/000/003/001/018
A161/A029

Thermodynamics of Chrome Diboride

Thermo- dynamic functions	T e m p e r a t u r e i n °K					
	298	500	1,000	1,500	2,000	173
ΔH	-30,000	-29,743	-28,506	-26,290	-23,1	-21,747
ΔZ	-30,071	-30,086	-31,122	-32,726	-35,315	-36,436

There are 5 tables and 5 references: 4 Soviet, 1 English.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Institute
of Nonferrous Metal and Gold.

SUBMITTED: January 13, 1959

Card 3/3

KRESTOVNIKOV, A.N.; VIGDOROVICH, V.N.

Equating the liquidus and solidus of ideal systems. Izv.vys.
ucheb.zav.; chern.met. no.5:5-7 '60. (MIRA 13:6)

1. Krasnoyarskiy institut tsvetnykh metallov.
(Phase rule and equilibrium)

S/081/62/000/020/007/040
B166/B186

AUTHORS: Krestovnikov, A. N., Vendrikh, M. S.

TITLE: Thermodynamics of titanium and chromium diboride production
by the boron carbide method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1962, 40, abstract
20B261 (Sb. nauchn. tr. In-t tsvetn. met. im. M.I. Kalinina,
v. 33, 1960, 3-7)

TEXT: The authors used their own experimental data on the C_p of TiB_2 and CrB_2 , and published data on the thermodynamic properties of the components of reactions $2TiO + B_4C + C = 2TiB_2 + 2CO$ and $Cr_2O_3 + B_4C + 2C = 2CrB_2 + 3CO$, to calculate ΔZ , K_p and $p(CO)$ in reactions for synthesizing TiB_2 and CrB_2 by the boron carbide method in the 298-2000°K range. [Abstracter's note: Complete translation.]

Card 1/1

S/081/62/000/018/004/059
B101/B186

AUTHORS: Krestovnikov, A. N., Lomov, A. L.

TITLE: Thermodynamics of reduction reactions of titanium oxides.
Reduction of titanium dioxide with hydrogen

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 18, 1962, 42, abstract
18B272 (Sb. nauchn. tr. In-t tsvetn. met. im. M. I.
Kalinina, v. 33, 1960, 8 - 12)

TEXT: The reduction reactions of TiO_2 with hydrogen and carbon were
analysed thermodynamically on the basis of published data, resulting from
which the following equations are recommended: for

$2TiO_2 + H_2 \rightarrow Ti_2O_3 + H_2O$, $\Delta H_T = 4095 + 0.874T + 3.856 \cdot 10^{-3}T^2$,
 $\Delta Z_T = 4095 - 2.0125T \log T - 3.856 \cdot 10^{-3}T^2 - 10.1T$; for $TiO_2 + 3C \rightleftharpoons TiC + 2CO$,
 $\Delta H_T = 109400 - 4T$, $\Delta Z_T = 109400 + 9.2 T \log T - 110.86T$. The mechanism
of TiO_2 reduction with hydrogen and carbon is discussed. [Abstracter's

Card 1/2

Thermodynamics of reduction ...

3/081/62/000/018/004/059
B101/B186

note: Complete translation.]

Card 2/2

KRESTOVNIKOV, A.N.; FEYGINA, Ye.I.

Speed of formation of metallic films during the mutual displacement of metals from a solution. Sbor. nauch. trud.

GINTSVETMET no.33:13-17 '60.

(MIRA 15:3)

(Metallic films) (Cementation (Metallurgy))

S/081/62/000/023/007/120
B162/B180

AUTHORS: Krestovnikov, A. N., Vigdorovich, V. N.

TITLE: Relationship between the melting points of chemical elements and the shortest spacings in their crystal lattices

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 77, abstract 23B539 (Sb. nauch. tr. In-t tsvetn. met. im. M.I. Kalinina, v. 33, 1960, 421-430)

TEXT: Four principal schemes are noted for the variation in melting point (T) in dependence on the interatomic spacing of the crystal (ISC). For the uni- and bivalent metals, T falls with rising ISC. For elements of the transition group, T rises with ISC. For elements, whose crystals are arranged on the basis of covalence bonds, rising ISC means a fall in T. In elements forming molecular crystal lattices, the bond between the elements of which is due to van der Waals forces, rising ISC means rising T. [Abstracter's note: Complete translation.]

Card 1/1

S/076/60/034/002/011/022
B015/B056

AUTHORS: Vigdorovich, V. N. and Krestovnikov, A. N. 1
TITLE: The Relative Position of the Lines of Phase Equilibria
in the Phase Diagram of Binary Systems 1
PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 2,
pp. 1791-1995 ✓

TEXT: The rule which says that a relative mutual position of phase-equilibrium lines is not possible if the extensions of the lines lie in the single-phase region of the phase diagram is mentioned in publications dealing with this subject. The present article shows that this rule is applicable only in a number of special cases, and is thus not of general validity. In order to provide a strictly objective proof of the rule of the relative position of phase-equilibrium lines in the phase diagram, the method of geometrical thermodynamics may be applied (Ref. 8). The authors recommend applying this method in each individual case and, as an example, they give the phase diagrams of a binary system of eutectic (Fig. 1) and peritectic type (Fig. 2). (Table, values for the stable

Card 1/2

The Relative Position of the Lines of Phase
Equilibria in the Phase Diagram of Binary
Systems

S/076/60/034/009/011/022
B015/B056

and metastable phase equilibria). It is shown by the various types of two-phase diagrams that the solubility in the metastable state always exceeds that in the stable state. K. P. Bunin and F. K. Tkachenko, and V. F. Zubarev are mentioned. There are 6 figures, 1 table, and 9 references: 5 Soviet, 4 US, and 1 British.

ASSOCIATION: Institut tsvetnykh metallov im. M. I. Kalinina
(Institute of Non-ferrous Metals imeni M. I. Kalinin)

SUBMITTED: December 20, 1958

Card 2/2

BELYAYEV, Anatoliy Ivanovich; KRESTOVNIKOV, A.N., prof., doktor, retsenzent;
ZHUKOVSKIY, Ye.I., prof., retsenzent; EL'KIND, L.M., red. izd-va;
KARASEV, A.I., tekhn. red.

[Electrolyte of aluminum baths] Elektrolit aliuminievykh vann. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 198 p. (MIRA 14:8)
(Aluminum—Electrometallurgy) (Electrolytes)

GERASIMOV, Yakov Ivanovich; KRESTOVNIKOV, Aleksandr Nikolayevich; SHAKHOV, Aleksey Sergeyevich. Prinimali uchastiye: DUDAREVA, A.G., assistant; LOMOV, A.L., assistant; FEYGINA, Ye.I., assistant; VYGODSKIY, I.A., inzh.; KUZNETSOV, F.A., aspirant; LAVRENT'YEV, V.I., aspirant; CHERNOV, A.N., red.; KAMAYEVA, O.M., red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Chemical thermodynamics in nonferrous metallurgy] Khimicheskaya termodinamika v tsvetnoi metallurgii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Vol.2. [Thermodynamics of copper, lead, tin, silver and their most important compounds; a handbook] Termodinamika medi, svintsa, olova, serebra i ikh vazhnykh soedinenii; spravochnoe rukovodstvo. 1961. 262 p.

(MIRA 14:11)

(Nonferrous metals--Thermal properties)
(Chemistry, Metallurgic)

KRESTOVNIKOV, Aleksandr Nikolayevich; VIGDOROVICH, Vilenin Naumovich;
BELYAYEV, A.I., retsenzent; LEVITSKIY, M.V., kand.khim.nauk,
retsenzent; BURTSEVA, K.G., kand.khim.nauk, retsenzent;
SAVAL'SKIY, S.L., starshiy prepodavatel', retsenzent; CHERNOV,
A.N., red.; KURDOVA, Ye.I., red.izd-va; VAYNSHTEYN, Ye.B.,
tekhn.red.

[Chemical thermodynamics; selected articles for pyrometallurgists]
Khimicheskaya termodinamika; izbrannye glavy dlia pirometallurgov.
Moskva, G. s.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1961. 280 p. (MIRA 14:3)

1. Chlen-korrespondent AN SSSR (for Belyayev). 2. Kafedra obshchey i
fizicheskoy khimii Severo-Kavkazskogo gorno-metallurgicheskogo insti-
tuta (for Levitskiy, Burtseva, Saval'skiy).
(Thermodynamics) (Chemistry, Physical and theoretical)

PHASE I BOOK EXPLOITATION

SOV/5355

Krestovnikov, Aleksandr Nikolayevich, and Vilenin Naumovich Vigdorovich

Khimicheskaya termodinamika; izbrannyye glavy dlya pirometallurgov
(Chemical Thermodynamics; Selected Chapters for Pyrometallurgists)
Moscow, Metallurgizdat, 1961. 280 p. Errata slip inserted.

Reviewers: A. I. Belyayev, Corresponding Member, Academy of Sciences
USSR; M. V. Levitskiy, Candidate of Chemical Sciences, K. G. Burtseva,
Candidate of Chemical Sciences, and S. L. Saval'skiy, Senior Lecturer,
all three associated with the Kafedra obshchey i fizicheskoy khimii
Severo-Kavkazskogo gorno-metallurgicheskogo instituta (Department
for General and Physical Chemistry of the North Caucasian Mining and
Metallurgical Institute); Ed. : A. N. Chernov; Ed. of Publishing House:
Ye. I. Kurdova; Tech. Ed. : Ye. B. Vaynshteyn.

PURPOSE: This book is intended for students at metallurgical institutes.
It may also be used by metallurgists, metallographers, and chemists
interested in self-instruction in problems of chemical thermodynamics.

Card-1/10.

Chemical Thermodynamics (Cont.)

SOV/5355

COVERAGE: The textbook discusses the major problems of chemical thermodynamics and its applications to the theory of equilibrium. The most important laws of thermodynamics and thermochemistry as well as the principles of the phase theory are reviewed with special emphasis on metallurgy. The main divisions of the text are illustrated by the solutions of concrete problems. No personalities are mentioned. There are 98 references: 57 Soviet, 28 English, 11 German, and 2 French.

TABLE OF CONTENTS:

Foreword	7
Symbols	9
Introduction	11
Card <u>2/10</u>	

33176

18.3100 1208 1454 1521

S/180/61/000/006/006/020
E111/E335

AUTHORS: Rozin, K.M., Vigdorovich, V.N. and Krestovnikov, A.N.
(Moscow)

TITLE: Method of continuous zone recrystallization

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Metallurgiya i toplivo,
no. 6, 1961, 56 - 73

TEXT: The authors point out that existing methods of zone-refining are discontinuous and inefficient since "dirty" ends are produced. Suggestions for continuous processes (Ref. 1: W.G. Pfann - J. Metals, 1954, v.7, no.2, p. 297; Ref. 2: W.G. Pfann - Zone Melting, New York-London, 1958) have evidently not been followed by realization, probably for theoretical rather than practical reasons. Other proposed methods for improving the ordinary process by removing the contaminated melted zone after its first passage through the ingot (Ref. 4: Aleksandrov, B.N., Verkin, B.I., Lifshits, I.M. and Stepanova, G.I. - FMM, 1956, v.2, no. 1, p.105; Ref. 5: H. Henker - Z.Erzbergbau und Metallhüttenwesen, 1960, v.13, no. 9, p.450) do not solve the problem of intensifying the
Card 1/10 9

33176

S/180/61/000/006/006/020
E111/E335

Method of continuous

process. The authors describe their method for continuous zone recrystallization, which both effectively separates the compounds and has a high productivity. These characteristics are obtained by diluting the melted zone at the last section of the separating part of the column, with simultaneous removal of the melted zone at the end of each pass through a special opening in the column. The vertical column is topped by a feeder supplying material of the initial composition to the receiver part of the column. Below this is the separating part of the column, where the material has undergone one or more purifying cycles in the usual manner. This part ends in an outlet. The basic equation for the region of the last fused zone is:

$$C = C_0 - (C_0 - kC_1) \left(\frac{H - x}{l} \right)^k \quad (2)$$

where x is the distance of the point considered from the outlet,
 H the height of the separating part,
 C the impurity concentration at point x ,

Card 2/10 9

33176

S/180/61/000/006/006/020
E111/E335

Method of continuous

C_0 the impurity in the initial material,

k the distribution coefficient,

l the length of the fused zone (length equivalent to volume with the constant cross-sectional area assumed).

For n passes the distribution of impurities is given by:

$$C_m^{(n+1)} = k \sum_{i=1}^m \bar{C}_i^n (1 - k)^{m-i} \quad (1 \leq m \leq p) \quad (3)$$

where p is the whole number of lengths l in the ingot,

C^{n+1} is the impurity concentration in the m -th section of the ingot after the $(n+1)$ -th pass (m being the serial number of the section in the direction of movement of the zone),

$C_i^{-(n)}$ is the average concentration in the i -th section after n passes of the melted zone.

Card 3/109

33176

S/180/61/000/006/006/020
E111/E335

Method of continuous

Fig. 4 shows the C/C_0 ratio as a function of x for various values of n for the indicated values of the parameters (Π is the length of the empty "plug" in the column). The wavy nature of the limiting curve, (i.e. the curve pertaining to high values of n) is due to the specific nature of the continuous process. Variations in k and Π have the greatest effect on impurity distribution but the more efficient purification obtained by increasing Π leads to a corresponding decrease in productivity. Even without allowing for this effect of "dirty ends" in the ordinary process, its effectiveness is greatly exceeded by that of the proposed continuous process (e.g. by a factor of 35 for $n = 16$). The productivity W is defined by:

$$W = \frac{vpS}{1 + H/\Pi} \quad (7)$$

where v is the crystallization velocity,
 s the column cross-sectional area.

Card 4/20

33176

S/180/61/000/006/006/020

E111/E335

Method of continuous

The useful yield of purified material n is expressed by:

$$\eta = \frac{1}{1 + l/\pi} \quad (8)$$

The authors recommend the following procedure (purification coefficient K_2 and the l/π value associated with the yield of purified product) for designing a continuous-zone refining column: 1) calculate or find empirically the purification coefficient K_1 for any column with the required k and l values; 2) find H_2/π_2 from:

$$\frac{H_2}{\pi_2} = \frac{H_1 \lg K_2}{\pi_1 \lg K_1} \quad (9)$$

3) find π_2 from the l/π ratio; 4) find H_2 (the height

Card 5/80 9

33176

S/180/61/000/006/006/020

E111/E335

Method of continuous

of the separating part) from H_2/Π_2 ; 5) find the receiver height ($\Pi_2 + \ell$); 6) from design considerations choose the number of heaters p ; 7) select, from experimental data, v and s to determine productivity. In practice, the column could be of many forms including (since some inclination is permissible) simple and complex spirals. The target of the slope of a turn must be greater than $d/2\ell$ for spirals, where d is the diameter or vertical dimension of the cross-section. Heater design is important and many types are possible; good control is obtained with rotating heaters, and heat-exchangers can be used. The authors studied the process with naphthalene in the simplest type of column - Fig. 8 (1 - vertical support; 2 - cantilever; 3 - column; 4-6 - movable heaters; 7 - support; 8 - cable; 9 - pulleys; 10 - drum; 11 - motor; 12 - reduction gear; 13 - bearing; 14 - opening for removing the melted zone; 15 - outlet). A magnetic clutch was incorporated, facilitating complete automation. The transparent column (molybdenum glass) enabled following the behaviour of the added impurities

Card 6/80 4

33176

S/180/61/000/006/006/020
E111/E335

Method of continuous

(0.2 - 0.5 wt.% alizarin, methyl-red or methylene blue). The feeder was 30 - 80 mm in diameter, 50 - 100 mm high, the corresponding figures for the separating part being 10 - 15 and 200 - 500 mm. The best outlet diameter was 7 - 9 mm. The three column heaters and those on the feeder and the tube from the opening ¹⁴ were controlled independently. No separation of components occurred at crystallization velocities over 24 mm/hour; below 6 mm/hour completely colourless naphthalene, mainly in the form of unstable single crystals, was obtained in a single pass. The higher limit is due to bending of isotherms, leading to a funnel-shaped crystallization front; improvement is possible. The cooling velocity largely determines the approach of the transformation to equilibrium and is given by the product of crystallization velocity and the axial temperature gradient. These conceptions are capable of extension to any cases of crystallization. The form of the melting front forming the upper boundary of the "plug" is also closely related to the effects considered and plays the part of a criterion of the homogeneity of the material in the column. Longitudinal

Card 7/10 9

33176

S/180/61/000/006/006/020

E111/E335

Method of continuous

temperature distribution in the region of the zone was measured with a copper-constantan thermocouple of 30 μ diameter, Fig. 11. There is appreciable mixing in the continuous process due to the kinetic energy of drops falling through the "plug" from the melting front. Mixing can be increased by rotation of the column about its own axis through 5 - 15°, stopping it sharply. Another feature of the process is that, when the crystallization front is horizontal, there will be no concentration gradient along the front, even with a considerable axial concentration gradient. The crystallization front was found to be little affected by changes in conditions, being protected by the melted zone which acted to damp-out the effects. The authors point out that their process is suitable for in-line use in production processes and complete automation. Its applicability can be extended by addition of "third components", which can alter the distribution coefficient and by the use of several continuous columns arranged to form a cascade. The continuous zone-

Card 8/10 ⁹

33176

S/180/61/000/006/006/020

E111/E335

Method of continuous

recrystallization method can also be used in physicochemical research, particularly to study reaction of components by determining distribution coefficients and investigation of phase composition and sequence of phase changes in the crystallization of binary and more complex systems.

There are 12 figures, and 5 references: 1 Soviet-bloc and 4 non-Soviet-bloc. The three English-language references mentioned are: Refs. 1-2 (quoted in text); Ref. 3: H. Reiss - J. Metals, v.6, no.9, 1954, 1053.

ASSOCIATION: Institut tsvetnykh metallov im. M.I. Kalinina
Institute of Non-ferrous Metals im. M.I. Kalinin) X

SUBMITTED: March 16, 1961

Card 9/10 9

21452

S/032/61/027/004/006/026
B110/B215

26.2532

AUTHORS:

Glazov, V. M. and Krestovnikov, A. N.

TITLE:

Examination of thermoelectric properties of substances in microvolumes

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 416-419

TEXT: Physicochemical properties of individual phases or structural components have frequently to be determined for microscopic studies of metal structures. As early as in 1946, G. V. Akimov suggested a method of measuring the thermo-emf of individual phases. Fig. 1 shows a device combined with the optical system of the ПМТ-3 (PMT-3) apparatus for measuring the microthermo-emf at any place of the microsection surface. Needle (1) is housed within (2) and fixed in its position by two ebonite bushings (3) and screws (4). The heating element (7) is fed via rheostat R_1 . The thermocouple (8) attached 3 - 4 mm above the needle tip measures the surface temperature. As soon as the needle tip touches the test specimen (9), a thermo-emf occurs which is determined by the

Card 1/7

21152

Examination of thermoelectric...

S/032/61/027/004/006/028
B110/B215

properties of the microvolume touched by the needle. The deflection on the measuring scale is regulated by rheostat R_2 and the temperature change of the needle tip. Relative values are obtained by reading the millimeter graduations on the scale. To obtain absolute values, however, it is necessary to graduate the apparatus. The latter is equipped with the respective needle and specimen which show a thermo-emf of a known quantity at a definite temperature. For this purpose, thermal calculation considering the parameters of needle and specimen, and exact temperature of the points of contact, are necessary: $t = t_0 B / [B \operatorname{Ch}(mL) + \operatorname{Sh}(mL)]$, where $B = m \lambda_c r_0 / 2 \lambda_{\text{specimen}}$, t_0 = temperature determined by thermocouple, $m = \sqrt{2 \alpha_c / \lambda_c r_0}$ (for needles of round cross section), $\lambda_{\text{specimen}}$, λ_c = coefficients of thermal conductivity of specimen and needle. Temperature field, resistivity, and therefore also the amperage (measured by a galvanometer) of the point of contact depend on the surface of contact. With hard specimens and soft needles, the latter have to be blunted and loaded by weights of 5 - 10 g to obtain equal surfaces of contact in relative and absolute measurements. Alloys of germanium - silicon (20%)

Card 2/7

21152

Examination of thermoelectric...

S/032/61/027/004/006/028
B110/B215

and bismuth - antimony (30%) obtained from chemically pure elements at 10^{-4} mm Hg in sealed quartz phials were examined to study liquation heterogeneities. Microsections were etched with HNO_3 (for Bi-Sb alloy), and a mixture of NaOH and H_2O_2 (for Ge-Si). The microthermo-emf was measured in a section of 5-6 grains of a cross section $\gg 1500 \mu$. Fig. 2 (Curves 1 - 5) shows different values for center and boundaries of the grain. In Bi-Sb alloys, they are considerably smaller in the grain center, and in Ge-Si alloys somewhat larger than along the boundaries. These results are in good agreement with the concentration dependence of microthermo-emf. Water-cooled alloys show no microinhomogeneities and, therefore, no difference in microthermo-emf (Fig. 2, Curve 6). This had been experimentally proven before. The states of alloy additions in solid solutions cannot always be clearly determined by methods of electrical conductivity, X-ray structural analysis, and microhardness. For the purpose of studying chemical reactions among the components of ternary solid solutions, the system copper - chromium - zirconium was examined. The high solubility of chromium and zirconium in copper yields a quasi-binary system: $\text{Cu-Cr}_2\text{Zr}$. The assumption of formations of Cr_2Zr

Card 3/7

21152

Examination of thermoelectric...

S/032/61/027/004/006/028
B110/B215

molecules was also due to the deviation of increase in microhardness and additivity. A 99.2% alloy of Cu was homogenized at 1000°C, and quenched in water. The time of measuring was 20 sec. Fig. 3 shows mean values of 5 - 6 measurements. The minimum lies at the point of intersection of the section examined, and that of the quasi-binary system Cu-Cr₂Zr. In contrast to thermo-emf, grain boundaries in microthermo-emf do not affect the determination. There are 3 figures and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: Ref. 6: F. D. Rosi, M. C. Steel, J. of appl. Phys., v. 29, no. 11 (1958); Ref. 9: R. B. Hill, H. J. Axon, D. Phil. J. Just of Metals, v. 83, 7 (1954/1955).

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov AS USSR).
Institut tsvetnykh metallov im. M. I. Kalinina (Institute of Nonferrous Metals imeni M. I. Kalinin)

Card 4/7

26543

S/076/61/035/008/006/016
B101/B218

24,7300 also 1413, 1418

AUTHORS: Vigdorovich, V. N., Rozin, K. M., and Krestovnikov, A. N.

TITLE: Study of the rate (intensity) of phase transformations

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 8, 1961, 1752-1758

TEXT: The term "rate (or intensity) of crystallization" is defined as increase in crystals of the solid phase g referred to the temperature change. Thus, it holds for the intensity $i = -dg/dt$ (1). This relation may be applied to any phase transformation taking place in a temperature interval. The authors start from a phase transformation $\beta \rightarrow \alpha$ in a phase diagram, the heterogeneous domain of which is limited by the lines $L_1(t)$ and $L_2(t)$

(Fig. 1). For the portion of phase α at t'' and t' they derive: $g'' = b''d''/a''b''$, and $g' = b'd'/a'b'$. The following fundamental equation is found for the intensity of phase transformations:

$$i = - \frac{c[L_1'(t) - L_1'(t)] + L_2(t)L_1'(t) - L_2'(t)L_1(t)}{[L_1(t) - L_1(t)]^2}, \quad (2).$$

Card 1/4

26543

S/076/61/035/008/006/016
B101/B218

Study of the rate (intensity) ...

Here, c denotes the concentration of the second component in the melt, $L'_1(t)$ and $L'_2(t)$ are the temperature-differential quotients of the lines that limit the heterogeneous domain. The applicability of Eq. (2) to several special cases is illustrated: a) For a phase diagram with a simple eutectic, it holds: $i = -cL'_1(t)/L'^2_2(t)$ (3). For a straight liquidus: $L(t) = -kt + b$ (4), and $i = k_0/(b - kt)^2$ (5). On the liquidus line along the straight $L(t) = -kt + b$, it holds for the intensity function:

$i_L = k/c$ (6), since in this case $c = -kt + b$. Based on these equations, the authors discuss the change of intensity which occurs with a change in temperature of the melt and a change in concentration of its second phase. It follows from Eq. (6) that for $c \rightarrow 0$ it holds: $i_L \rightarrow \infty$. b) In the case of a concave course of the curve of the phase transformation, $L''(t) > 0$, the "iso-rate line" $\psi(t)$ is calculated, which touches the line $L(t)$ of the phase equilibrium: $\psi(t) = L(t)$, $\psi'(t) = L'(t)$ (7). By substituting Eq. (7) into Eq. (3), and based on $\psi(t) = -iL'^2(t)/L'(t)$, the authors obtain for the minimum intensity on the boundary of the phase equilibrium: $L(t)'' = [L'(t)]^2/L''(t)$ (8). For $c = \text{constant}$, the changes of i are derived

Card 2/4

26543

S/076/61/035/008/006/016
B101/B218

Study of the rate (intensity) ...

as a function of temperature. c) For a phase diagram that represents the equilibrium of two solutions, the authors write down:

$L(t) = \alpha(1 - \beta t) / [\alpha + (1 - \alpha)\beta t]$ (12), where α is a parameter determining position and shape of the curve, and β is a scale factor. If coefficient α_1 corresponds to the curve $L_1(t)$, and coefficient α_2 to the curve $L_2(t)$, then it holds:

$$i = -\beta \frac{c[\alpha_1\alpha_2(1-\beta t)^2 - (\beta t)^2] - \alpha_1\alpha_2(1-\beta t)^2}{(\alpha_2 - \alpha_1)(\beta t)^2(1-\beta t)^2}. \quad (13).$$

This function becomes discontinuous for $t = 0$, $t = 1/\beta$, and $\alpha_1 = \alpha_2$. The course of the intensity function is discussed for several values of α_1 and α_2 . The analytic method developed is suggested for solving practical tasks in connection with crystallization processes, physico-chemical studies, material cleaning etc. There are 6 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut tsvetnykh metallov im. M. I. Kalinina, Kafedra
fizicheskoy khimii (Institute of Nonferrous Metals imeni
M. I. Kalinin, Department of Physical Chemistry)

Card 3/4

ORLOVTSEV, Yu.V.; KRAPUKHIN, V.V.; KRESTOVNIKOV, A.N.

Investigating the gas content of certain nonferrous metals by
the method of mass spectrometry. Izv.vys.ucheb.zav.; tsvet.met.
5 no.1:132-138 '62. (MIRA 15:2)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra
fizicheskoy khimii.

(Gases in metals) (Mass spectrometry)

SAMSONOV, Grigoriy Valentinovich; ~~KRESTOVNIKOV~~, A.N., doktor tekhn. nauk, prof., retsenzent; ORMONT, B.F., prof., doktor khim. nauk, retsenzent; BAL'SHIN, M.Yu., kand. tekhn. nauk, retsenzent; OL'KHOV, I.I., red.; ARKHANGEL'SKAYA, M.S., red. izd-va; ISLENT'YEVA, P.G., tekhn. red.

[High-melting compounds; manual on properties and uses] Tugoplavkie soedineniia; spravochnik po svoistvam i primeneniui. Moskva, Metallurgizdat, 1963. 397 p. (MIRA 16:5)
(Refractory materials)

GERASIMOV, Yakov Ivanovich; KRESTOVNIKOV, Aleksandr Nikolayevich;
SHAKHOV, Aleksey Sergeyevich; Prinsipali uchastiye: LOMOV,
A.L., assistant; LAVRENT'YEV, V.I., aspirant; KAMAYEVA, O.M.,
red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Chemical thermodynamics in nonferrous metallurgy] Khimicheskaya
termodynamika v tsvetnoi metallurgii; spravocnoe rukovodstvo.
Moskva, Metallurgizdat. Vol.3. [Thermodynamics of tungsten,
molybdenum, titanium zirconium, niobium, tantalum and their most
important compounds] Termodynamika vol'frama, molibdena, titana,
tsirkoniia, niobiia, tantala i ikh vashneiishikh soedinenii. 1963.
283 p. (MIRA 16:2)
(Nonferrous metals--Thermodynamic properties)

KRESTOVNIKOV, Aleksandr Nikolayevich; VLADIMIROV, Leonid Pavlovich;
GULYANITSKIY, Boris Stepanovich; FISHER, Aleksandr
Yakovlevich; YEGOROV, A.M., red.; ARKHANGEL'SKAYA, M.S.,
red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Handbook on calculations of equilibrium of metallurgical
reactions; rapid methods] Spravochnik po raschetam ravnovesii
metallurgicheskikh reaktsii; uskorennye metody. [By] A.N.
Krestovnikov i dr. Moskva, Metallurgizdat, 1963. 416 p.
(MIRA 16:7)

(Metals--Thermodynamic properties)
(Chemistry, Metallurgic--Handbooks, manuals, etc.)

POLYAKOV, Ya.M.; NISEL'SON, L.A.; KRESTOVNIKOV, A.N.

Process for producing tantalum and niobium by the reduction of their
pentachlorides with hydrogen (reduction of $TaCl_5$). Zhur.prikl.khim.
36 no.1:25-33 Ja '63. (MIRA 16:5)
(Tantalum) (Niobium)

ACCESSION NR: AP4009842

S/0149/63/000/006/0075/0082

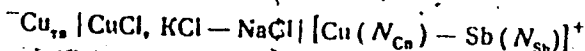
AUTHORS: Krestovnikov, A. N.; Lomov, A. L.

TITLE: Study of thermodynamic properties of the double system Cu-Sb by the electromotive force method

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1963, 75-82

TOPIC TAGS: Cu-Sb alloy, thermodynamic property of Cu-Sb, binary alloy thermodynamics, PPTV-1 potentiometer, M25 galvanometer

ABSTRACT: The Cu-Sb alloy system was studied in the temperature interval 1115-1215K and in the region 0.9013-0.0485 atomic parts of Cu. The emf of the concentration chains



were measured and plotted in respect to temperature. The graphs were used to determine the emf values (by interpolation) at the temperatures 1115, 1140, 1165, 1190 and 1215K. These emf values were then used to calculate the logarithms of

Card 1/3

ACCESSION NR: APL009842

copper activity from equation

$$\lg a_{\text{Cu}} = -\frac{23063}{4,576 T^{\circ}}$$

where \mathcal{E} - emf. The liquid state of overcooled copper at experimental temperatures was taken to be standard, and the partial excess thermodynamical values ($\Delta\bar{S}, \Delta\bar{Z}, \Delta\bar{H}$) for Cu and Sb were calculated for various values of Cu concentration at 1215K. It was established that: 1) this system had considerable negative deviations from the ideal law; 2) the formation of the Cu-Sb solutions was accompanied by heat separation (minimum value of ΔH was -1385 cal/g atom at 1215K and $N_{\text{Cu}} = 0.75$); 3) considerable positive excess entropies of mixing were characteristic of Cu-Sb solutions; this was explained by the large difference between the atom volumes of the components. The experimental procedure followed in this work involved the use of the PPTV-1 potentiometer and the M25 galvanometer. Temperature was measured by the Pt-PtRh thermocouple. Orig. art. has: 5 tables, 3 figures, and 2 formulas.

ASSOCIATION: Moskovskiy institut stali i splavov, Kafedra fizicheskikh issledovaniy protsesov proizvodstva poluprovodnikov*kh materialov i chisty*kh

Card 2/3

ACCESSION NR: AP4009848

S/0149/63/000/006/0154/0155

AUTHOR: Krestovnikov, A. N.; Gimel'farb, F. A.

TITLE: The 17th scientific-technical conference of students at the Moskovskiy Institut stal' i splavov (Moscow Institute for Steel and Alloys)

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1963, 154-155

TOPIC TAGS: steel, alloy, conference, student conference, ore dressing, mining, geology

ABSTRACT: A report is given of the proceedings of a conference held on 16-18 April 1963 and attended by more than 700 students, about 130 instructors and representatives of industry and scientific and research institutes. The conference was divided into 11 panels which discussed 89 papers selected from the 136 presented to the conference. These papers dealt with geology, mining, ore dressing, metallurgy, metal science, and nonferrous metal treatment. Students of the Institute presented the papers based on laboratory investigations and practical work. Short abstracts of some of the more important papers are given, including the following titles: -Problems of formation of granite; -Some questions in physics and chemistry in connection with zone formation in ore deposits; -The process of formation of ore bearing breccia tubes; -Analytic method for the determination of the

Card 1/2

ACCESSION NR: AP4009848

dimensions of terraces during scraper stripping operations; -Well-type headers for draining mines; -Rational use of mine timber; -The use of ultrasound for emulsification of flotation reagents; -Flotation of the mineral "gentgel'vin", which is a possible source of beryllium; -Substances which have a depressing effect during the flotation of some rare metal ores; -Producing a rhenium coating on tungsten and molybdenum wire; -Reduction of zirconium concentrate by calcium hydride followed by electrowinning; -Extraction of rare earth metals from tails of the magnetic separation of calcined ores; -Technology of obtaining zirconium sulfate for use in tanning; -Effect of structure on pliability of aluminum alloys in the solid-liquid state; -Effect of the rate of cooling on the development of dendritic liquefaction in aluminum alloys; -The use of ultrasound on flotation pulp; -Removing enamel deposits from gauges. Orig. art. has: no graphics.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 07Feb64

ENCL: 00

SUB CODE: ML

NO REF SOV: 000

OTHER: 000

Card 2/2

ACCESSION NR: AP4017567

8/0149/64/000/001/0131/0138

AUTHOR: Polyakov, Ya. M.; Nisel'son, L. A.; Krestovnikov, A. N.

TITLE: Preparation of niobium and tantalum from the vapor phase

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 1, 1964, 131-138

TOPIC TAGS: niobium, tantalum, niobium production, tantalum production, niobium coating, tantalum coating, vapor phase plating, niobium alloy, tantalum alloy

ABSTRACT: The following conclusions resulted from a review of Soviet and Western work on the preparation of niobium and tantalum from the vapor phase. The production of niobium and tantalum coatings, deposited from the vapor phase onto steel, iron, copper, nickel, molybdenum, tungsten, graphite, and quartz, is one of the most important uses of Nb and Ta. Thermal dissociation of NbCl_5 , NbBr_5 , NbI_5 , TaCl_5 , TaBr_5 , and TaI_5 yields metals of highest purity. The reduction of niobium and tantalum pentachlorides by hydrogen is at present the most economical manufacturing technique. Reduction of niobium and tantalum halides, combined with those of alloying admixtures, may open the way to creation of Nb- and Ta based Ti, Zr, Al, W, Mo, and Sn alloys. Thermal curves for the deposition of Nb and Ta-pentahalides obtained by Rolsten (Trans.

Cord 1/2

ACCESSION NR: AP4017567

Metallurgical Soc, AIME, 215, No. 3, 472, 1952 and J. Electrochem Soc-y, 106, No. 11, 975, 1959) and the work of Yemel'yanov, Yevstyukhin, and Leont'yev (Sb. Metallurgiya i metallovedeniye chisty*kh metallov, no, 2, 27, 1960 and no. 3, 127, 1961) on the kinetics of niobium iodide refining are discussed. The latter identify 2 types of temperature dependence for Nb-deposition — one monotonous at < 620 K and one with a maximum at > 620 K, which is believed to result from the existence of different Nb-iodides at 500-550 K (NbI_3) and 650 K (NbI_5). A maximum Nb-deposition rate of 30 g/hr was reached at 650 K in the reactor and 1135 K on the 1500 mm long thread. Orig. art. has: 5 graphs.

ASSOCIATION: Kafedra fiziko-khimicheskikh issledovaniy proizvodstva poluprovodnikov*kh materialov i chisty*kh metallov, Moskovskiy institut stali i splavov (Department of Physicochemical Studies on the Production of Semiconductors and Pure Metals, Moscow Institute for Steel and Alloys)

SUBMITTED: 20May63

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 011

OTHER: 021

2/2

Card

ACCESSION NR: AP4024771

8/0080/64/037/003/0669/0672

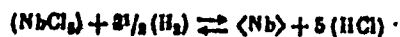
AUTHOR: Nisel'son, L. A.; Polyakov, Ya. M.; Krestovnikov, A. N.

TITLE: Research on the process of niobium extraction by reduction of NbCl₅ by hydrogen. II Communication II

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 3, 1964, 669-672

TOPIC TAGS: niobium extraction, reduction, NbCl₅, TaCl₅, equilibrium constant, NbCl₅ reduction

ABSTRACT: From an earlier work (Ya. M. Polyakov, L. A. Nisel'son, A. N. Krestovnikov, ZhPKh, XXXVI, 1, 25 (1963)), it follows that the reduction of NbCl₅ with hydrogen occurs more easily and at lower temperatures than the reduction of TaCl₅. From the data of temperature dependence of the equilibrium constant (Kp) of the reaction equilibrium yields (Fig. 1) and degrees of conversion of



Card_ 1/5

ACCESSION NR: AP4024771

NbCl₅ into metal (Fig. 2) for various temperatures and NbCl₅ concentrations in the initial vapor-gaseous mixtures were computed. The data obtained makes it possible to estimate the temperature and concentration limits within which optimum operating conditions of the process can be created in industrial equipment, namely: 0.1-0.2 of niobium pentachloride mole in 1 mole of vapor-gaseous mixture and 1000-1300 C. In these conditions the rate of niobium precipitation was 0.7-1.5 g/cm². hr. with a yield of 1.5-3.2 g. of niobium in 1 mole of the mixture; degrees of conversion of niobium pentachloride into metal are 15-30% and specific consumption of electric power is 17-22 kw. hr. in one kg. of niobium (Fig. 3). It should be noted that the indexes mentioned above are not optimum and can be increased by taking into account the variation of the vapor-gaseous flow rate and apparatus design. "Graduate K. V. Tret'yakova took part in the experiment". Orig. art. has: 1 table, 5 figures.

ASSOCIATION: None

SUBMITTED: 28Dec62

DATE ACQ: 16Apr64

ENCL: 03

SUB CODE: GC

NO REF SOV: 001

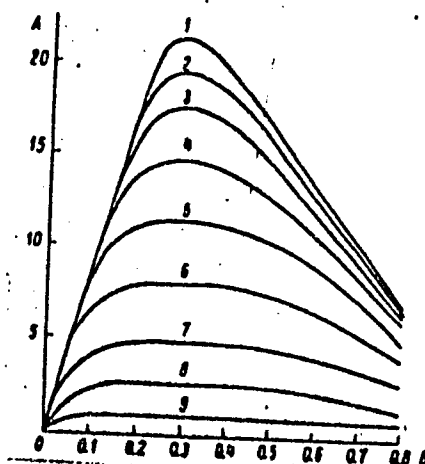
OTHER: 000

Card 2/5

ACCESSION NR: AP4024771

ENCLOSURE: 01

Fig. 1 - Dependence of equilibrium yield of niobium (A, g/mole of mixture) on initial concentration of niobium pentachloride (B, mole/mole of mixture) in vapor-gaseous mixture $\text{NbCl}_5 + \text{H}_2$ and on temperature. Temperature ($^{\circ}\text{K}$): 1 - 1500, 2 - 1400, 3 - 1300, 4 - 1200, 5 - 1100, 6 - 1000, 7 - 900, 8 - 800, 9 - 700.

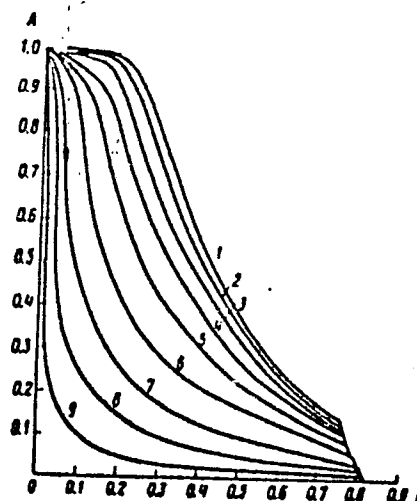


Card 3/5

ACCESSION NR: AP4024771

ENCLOSURE: 02

Fig. 2 - Dependence of equilibrium degree of conversion of niobium pentachloride into metal, on initial concentration of niobium pentachloride in vapor-gaseous mixture $\text{NbCl}_5 / \text{H}_2$ and on temperature. Symbols are the same as in Fig. 1

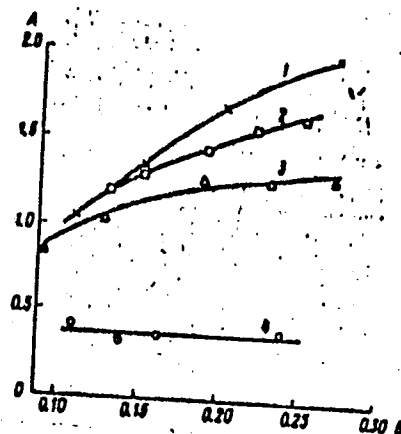


Card 4/5

ACCESSION NR: AP4024771

ENCLOSURE: 03

Fig. 3 - Dependence of specific electric energy consumption (A , kw. hr./kg.Nb) on temperature (B , °C) and concentration of niobium pentachloride in vapor-gaseous mixture $NbCl_5 / H_2$. Content $NbCl_5$ (mole): 1 - 0.1, 2 - 0.15, 3 - 0.20.



Card 5/5

L 24785-65 EWT(m)/LWP(b)/EWP(t) IJP(c) JD/JW
 ACCESSION NR: AP4048600 S/0076/64/038/011/2569/2574

23
 22
 8

AUTHOR: Lomov, A. L. (Moscow); Krestovnikov, A. N. (Moscow)

TITLE: Investigation of the thermodynamic properties of binary bismuth-antimony metallic systems by the method of electromotive forces 27 27

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 11, 1964, 2569-2574

TOPIC TAGS: binary alloy, bismuth antimony system, electromotive force method, alloy, thermodynamic property

ABSTRACT: The thermodynamic properties of the bismuth-antimony system in the liquid phase have been investigated by the method of electromotive forces.

The emfs of the concentration cells of the type
 $-Bi(l) | BiCl_3, KCl-NaCl | [Bi(N_{Bi})-Sb(N_{Sb})] (l)^+$
 were measured at temperatures in the 1215-1215 K range. Ten electrode melts with the concentration of from 0.0679 to 0.9021 were studied. Both negative and positive deviations from Raoult's law were found, as well as negative-positive

Card 1/2

L 24785-65

ACCESSION NR: AP4049600

heating effects and excessive mixture entropies. For the explanation of the deviations of S from ideal values, the work by G. Scatchard (Trans. Faraday Soc. 33, 160 (1937)) is applied. Orig. art. has: 4 figures and 12 equations.

ASSOCIATION: Institut stal i splavov (Institute of Steel and Alloys)

SUBMITTED: 15Apr63

ENCL: 00

SUB CODE: MM, TD

NO REF SOV: 009

OTHER: 013

Card 2/2

LOMOV, A.L.; KRESTOVNIKOV, A.N.

Study of the thermodynamic properties of the ternary system
bismuth - copper - antimony along the cross-section

№1 : №4 3:1 by the electromotive force method. Zhur.fiz.khim.

38 no.11:2658-2662 N '64.

(MIRA 18:2)

1. Moskovskiy institut stali i splavov.

L 61920-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(n)-2/T/EWP(t)/EEC(b)-2/EWP(b)
 Pt-7/Pi-4/Pu-4 IJP(c) JD/WW/JG/CG

ACCESSION NR: AP5016348

UR/0149/65/000/002/0105/0112
 66.065

44
 42
 B

AUTHOR: Krestovnikov, A. N.; Rozin, K. M.

TITLE: Calculation of multiple-pass zone recrystallization

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 2, 1965, 105-112

TOPIC TAGS: zone refining, zone recrystallization

ABSTRACT: An accurate calculation of the processes of zone recrystallization and normal crystallization makes it necessary to consider both the concentration dependence of the distribution ratio and certain necessary changes in the basic parameters of the process: crystallization rate, dimensions of the molten zone, etc. To this end, the authors used a method of calculation in which the continuous motion of the crystallization front along the ingot is replaced by a pulsed motion characterized by the same average velocity and a certain step h . Equations are derived for the concentration of impurities over the entire length of the ingot (with the possible exception of the last zone). The method of calculation permits the solution of complex problems, many of which have no analytical solution. Its scope is

Card 1/2

L 61920-65

ACCESSION NR: AP5016348

illustrated with continuous zone recrystallization, in which the calculation is complicated not only by the multiple passes of the molten zone along the column (as in the case of simple zone recrystallization), but also by the continuous displacement of the material along the column. The examples illustrated in the article demonstrate that the method can be used for calculating complex crystallization processes involving separation as well as for most actual processes in which changes in the basic parameters of the process must be taken into account. The method can be used for selecting optimum conditions of the process and for programming changes in its parameters (crystallization rate, zone length, distribution ratios, etc.). Orig. art. has: 6 figures, 1 table, and 5 formulas.

ASSOCIATION: Kafedra fiziko-khimicheskikh issledovaniy protsessov proizvodstva poluprovodnikovyykh materialov i chistyykh metallov, Moskovskiy institut stali i splavov (Department of Physicochemical Research on Production Processes for Semiconductor Materials and Pure Metals, Moscow Institute of Steel and Alloys)

SUBMITTED: 10Oct63

ENCL: 00

SUB CODE: MM

NO REF SOV: 004

OTHER: 012

Card 2/2

KRESTOVNIKOV, A.N.; GIMEL'FARB, F.A.

The 18th Scientific Technological Conference of Students of the
Moscow Institute of Steel and Alloys. Izv. vys. ucheb. zav.;
tsvet. mat. 8 no.1;171-172 '65. (MIRA 18:6)

L 34527-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(n)-2/ENG(m)/EPA(bb)-2/EWP(t)/EWP(b) Pt-10/
Pu-4 LJP(c) JD/WW/JW/JG

ACCESSION NR: AP5003123

S/0080/65/038/031/0188/0182

AUTHOR: Lomov, A. L.; Krestovnikov, A. N.

TITLE: Investigation of thermodynamic properties of the ternary metallic system Bi-Cu-Sb at the section $N_{Bi}:N_{Sb} = 1:1$ by the e. m. f. method

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 1, 1965, 188-192

TOPIC TAGS: bismuth copper antimony system, thermodynamic property, mixing entropy, mixing heat

ABSTRACT: The thermodynamic characteristics of ternary liquid metal alloys of the Bi-Cu-Sb system in which the $N_{Bi}:N_{Sb}$ ratio was maintained unchanged at 1:1 were studied at 1215K by the e. m. f. method. These systems were characterized by negative deviation from Raoul's law, i. e., when $0 < N_{Cu} < 1$, the activity of Cu was less than ideal, by positive excess entropy of mixing, by positive heat of mixing when $0 < N_{Cu} < 0.46$, ($\Delta H_{mix} = 0$ when $N_{Cu} = 0.46$), and by negative heat of mixing when $N_{Cu} > 0.46$. The positive excess entropy of mixing in these was ex-

Card 1/2

2 34527-65

ACCESSION NR: AP5003123

plained as associated with the large difference in atomic volume of the component metal pairs Bi-Cu and Cu-Sb. Orig. art. has: 4 equations, 5 figures, and 2 tables.

ASSOCIATION: None

SUBMITTED: 17May63

ENCL: 00

SUB CODE: GC

NR REF SOV: 002

OTHER: 001

Card 2/2

LOMOV, A.L.; KRESTOVNIKO, A.N.

Thermodynamic properties of the ternary metallic system bismuth-copper-antimony. Dokl. AN SSSR 156 no.6:1389-1390 Je '64.
(MIRA 17:8)

1. Predstavleno akademikom A.A. Bochvarom.

L 53927-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(n)-2/ENG(m)/I/EMP(t)/EMP(b)/ENA(h) Pz-6/
 Pt-7/Peb/Pu-4 IJP(c) RDW/JD/WH/JG/AT
 ACCESSION NR: AP5010584 UR/0020/65/161/003/0629/0632

AUTHOR: Glazov, V. M., Krestovnikov, A. N., Glagoleva, N. N.

TITLE: Fundamental changes in certain physicochemical properties during fusion of
 semiconductors of various structural groups

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 629-632

TOPIC TAGS: semiconductor fusion, antimonide structure, telluride structure, selenide
 structure, silicide structure, electrical conductivity, magnetic susceptibility, electron
 shell structure, liquid semiconductor

ABSTRACT: The compounds AlSb, GaSb, InSb, GaAs, ZnTe, CdTe, CuI, Ga₂Te₃ and
 In₂Te₃, having a ZnS-type lattice; PbTe and PbSe, having an NaCl lattice; and Mg₂Si,
 Mg₂Ge, Mg₂Sn, and Mg₂Pb, having a lattice antiferromorphous to CaF₂, were investigated
 during melting to determine changes in electrical conductivity and magnetic susceptibility.
 From the data obtained, it was concluded that compounds of isoelectronic series having
 a similar type of chemical bonding, the same structure, and practically the same inter-
 atomic distances and densities in the solid state display fundamental differences in their
 physicochemical properties on melting. In the authors' view, the main factor affecting
 this change in properties is the structure of the outer electron shells of the atoms forming

Card 1/2

L 53927-65

ACCESSION NR: AP5010584

the compounds. When $A^{III}B^V$ compounds melt, a liquid of high coordination is formed, and part of the valence electrons are converted to an electron gas; this also applies to $A_2^{II}B^{IV}$ compounds. In the case of $AlTe$ and $AlVEVI$ compounds, the configuration of the outer electron shells of the components is such that the formation of chain structures is possible; as a result, these compounds can retain their homopolar bonds and remain semiconductors in the liquid state, as is indeed the case. Orig. art. has: 1 table.

ASSOCIATION: Moskovskiy Institut stali i splavov (Moscow Institute of Steel and Alloys): Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 02Jul64

ENCL: 00

SUB CODE: IC, SS

NO REF SOV: 009

OTHER: 002

fac
Card

2/2

L 54701-65 - EWT(m)/EWG(m)/EWP(t)/EWP(b) IJP(c) RLW/JD
 ACCESSION NR: AP5013445

UR/0020/65/162/001/0094/0097

AUTHOR: Glazov, V. M.; Krestovnikov, A. N.; Glagoleva, N. N.

TITLE: Physico-chemical analysis of binary systems of tellurium with elements of the germanium subgroup in the liquid phase

SOURCE: AN SSSR. Doklady, v. 162, no. 1, 1965, 94-97

TOPIC TAGS: binary system, tellurium, germanium subgroup, tin, lead, alloy

ABSTRACT: Chemical interaction in the germanium-, tin-, and lead tellurides was studied in the liquid phase in order to elucidate the observed thermal stability of these compounds above their respective melting points. Several alloys of Te with Ge, Sn, and Pb were prepared by fusing high purity metal mixtures in evacuated (up to 10^{-3} mm Hg) quartz ampules. The atomic ratio of Te:Ge varied from 1:9 to 9:1, that of Te:Sn varied from 2:8 to 9:1, and that of Te:Pb varied from 1:9 to 8:55:1.45. Dependence of viscosity and electrical conductivity upon temperature was measured in the 730° to 1200°C range and correlated with the phase diagrams of the Te-Ge, Te-Sn, and Te-Pb systems. For all three systems, maxima of viscosity and minima of electrical conductivity coincide with alloys containing 50 atomic %

Card 1/2

L 54701-65

ACCESSION NR: AP5013445

of Te. The extrema of viscosity and electrical conductivity indicate that melting of germanium telluride has a congruent character. A eutectic transition $La+atGeTe$ in the germanium telluride system occurs at $725^{\circ}C$. Slightly above their melting points, germanium- and tin tellurides are substantially dissociated while lead telluride is only very slightly dissociated. A substantial dissociation of the lead telluride melt first occurs about $50^{\circ}-70^{\circ}C$ above the melting temperature. Orig. art. has: 1 table and 3 figures. The paper was presented to Academician I.V. Tananayev on Nov. 11, 1964.

ASSOCIATION: Institut stali i splavov (Institute of Steel and Alloys); Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 31Oct64

ENCL: 00

SUB CODE: MM, GC

NO REF SOV: 010

OTHER: 001

Card 2/2 *mb*

KRESTOVNIKOV, A.N., doktor tekhn. nauk; VENDRIKH, M.S., kand. tekhn. nauk;
KUZ'MICHEVA, V.I., inzh.; MATUSEVICH, I.S., inzh.; SHKLENNIK, Ya.I.,
kand. tekhn. nauk; TELIS, M.Ya., inzh.

Silica-free molds for the casting of heat resistant alloys and
high-melting metals. Lit. proizv. no.9:1-3 S '65. (MIRA 18:10)

1. KUNSTOVNIKOV, G. A.
2. USSR (660)
4. Automobiles - Design and Construction
7. Effect of the net weight of an automobile on its mobility and fuel economy.
Avt. tekhn. prom. No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

LEVENSTERN, O.I., kandidat tekhnicheskikh nauk; KRESTOVNIKOV, G.A., inzhener;
OSIPYAN, A.V., kandidat tekhnicheskikh nauk, redaktor; KOZLOVSKIY, I.S.,
kandidat tekhnicheskikh nauk, redaktor; ZIL'BERBERG, Ya.G., inzhener,
redaktor; BRILING, N.R., professor, doktor tekhnicheskikh nauk, redaktor;
KALISH, G.G., doktor tekhnicheskikh nauk, professor, redaktor; RAMAYYA,
K.S., doktor tekhnicheskikh nauk, redaktor; LIPGART, A.A., professor,
redaktor; PRIYADILOV, V.I., kandidat tekhnicheskikh nauk, redaktor;
ROZANOV, V.G., kandidat tekhnicheskikh nauk, redaktor; CHISTOZVONOV,
S.B., inzhener, redaktor; SHTEYNGART, M.D., redaktor; UVAROVA, A.F.,
tekhnicheskiiy redaktor.

[Heating of brake linings in passenger cars] Nagrev termoznykh nakladek
legkovykh avtomobilei. Moskva, Gos.nauchno-tekh.izd-ve mashinestroit.
lit-ry, 1955. 35 p. (Moscow. Gosudarstvennyi nauchno-issledovatel'skii
avtomobil'nyi i avtomotorny i institut. Trudy, no.78). (MIRA 9:7)

1. Direktor Nauchno-issledovatel'skogo avtomotornogo instituta (for
Osipyan). 2. Zamestitel' direktora Nauchno-issledovatel'skogo avtomoter-
nogo instituta (for Kozlevskiy). 3. Chlen-korrespondent AN SSSR (for Briling).
(Automobiles--Brakes)

AUTHOR:

KRESTOVNIKOV, G.A.

113-58-3-7/16

TITLE:

The Determination of Resistances to the Movement of an Automobile (Opredeleniye soprotivleniy dvizheniyu avtomobilya)

PERIODICAL:

Avtomobil'naya Promyshlennost', 1958, Nr 3, pp 22-27 (USSR)

ABSTRACT:

In the designing of automobiles, it is important to know the value of resistance at various speeds. This value is usually obtained from automobiles similar in type to the one being designed. A method is proposed for calculating the specific power necessary for surmounting the resistance to the movement of the automobile. In this calculation, the following factors are taken into consideration: the resistance to the rolling of the radial deformation of the tires; air resistance; the resistance to the turning of the wheel bearings; the resistance to the turning of the power gear; the losses from shaking-up of the oil; the losses from the friction in the bearings when running with an without load; the expenditures of energy for noise and chassis vibrations; the formation of tracks; the additional deformation of the tires from irregularities of the road. Figure 1 shows the curve of the corrections applicable to dry, hard, flat roads. In Table 1 the values calculated by applying

Card 1/2

The Determination of Resistances to the Movement of an Automobile

113-58-3-7/16

the formula and the curve are represented for a resistance of 1.0 - 3.5 hp hours²/tkm². In Table 3 the values for the resistance factor and the specific power of resistance for different Soviet and foreign automobiles are represented. The Table shows that the resistance factor characterizes the expenditure of energy necessary to surmount resistance to this movement. The value of the resistance factor may be represented as the function of the general weight of the automobile and the number of its driving axles (Figure 4). Experiments demonstrated that the resistance factor decreases on hard and flat roads when the weight of the automobile increases. This is due to the lower air resistance and the lower energy needed for the shaking-up of the oil. There are 3 tables, 4 figures, and 5 references, 4 of which are Soviet, 1 English.

ASSOCIATION: NAMI

AVAILABLE: Library of Congress

Card 2/2

1. Passenger vehicles-Test methods
2. Passenger vehicles-Design

AUTHOR: Krestovnikov, G.A.

SOV/113-58-12-7/17

TITLE: The Influence of the Non-Coincidence of an Automobile Track on Its Traction Properties and Roadability (Vliyaniye nesovpadeniya kolei avtomobilya na yego tyagovyye kachestva i prokhodimost')

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 12, pp 22-23 (USSR)

ABSTRACT: Automobiles of type 4X4 have a high gravity center and are not very resistant to skidding and overturning. The resistance may be raised by increasing the rear track of the automobile, but this adversely influences the traction power and roadability. The specific free traction power has been determined by a self-recording traction dynamometer. The experiments were done on a GAZ-63A automobile with a load of 2 tons. The total weight of the automobile is 5,540 kg, of which 2,210 kg rested on the front bridge and 3,330 kg on the back bridge. The tires were of 9.75 - 18" type. The results of the experiments are given in a table. On solid ground, the roadability is not affected by increasing the rear track. On yielding ground and snow, the free specific traction power is reduced. These experimental results may also be used for other automobiles of type 4X4. The differ-

Card 1/2

SOV/113-58-12-7/17

The Influence of the Non-Coincidence of an Automobile Track on Its Traction Properties and Roadability

ence between front and back track should not exceed 25 - 32% of the tire breadth. Only in rare cases may 50 - 60% be reached. In the latter case, the traction properties and roadability will be reduced by 10 - 15%. There is 1 table.

ASSOCIATION: NAMI

Card 2/2

KRESTOVNIKOV, G.A.

Determining operating conditions of an automobile during
running tests. Avt.prom. 27 no.1014-7 0 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy
institut.

(Automobiles--Testing)

KRESTOVNIKOV, G.A.; PEVUNCHIKOV, V.I.

Determining traction characteristics of motortrucks under unsteady braking conditions. Avt.prom. 27 no.12:10-12 D '61.

(MIRA 15:1)

1. Nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.
(Motortrucks--Testing)

KRESTOVNIKOV, G.A.

Resistance of motor vehicles to motion. Avt. prom. 30 no.6;
14-16 Je '64. (MIRA 17:12)

1. Tsentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-
issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

ARMADENOV, A.G., kandi. tekhn. nauk; KRESTOVNIKOV, G.A.; SEMENOV, V.M.,
i. tekhn. nauk

Determining operating conditions of the 6x6-type motortruck.
Avt. prom. 31 no.9:16-17 S '65. (MIRA 18:9)

1. Tsentral'nyy nauchno-issledovatel'skiy ordena Trudovogo
Krasnogo Znameni avtomobil'nyy i avtomotornyy institut.

CA

PROCESSES AND PROPERTIES INDEX

Micropetrographic correlation of the Paleozoic deposits on the western slope of the Southern Ural. V. N. Kirstovnikov and G. I. Trokurovich. *Nefteyanee Khimiya* 26, No. 8, 15-20(1974).—A discussion of carbonate rocks, basic structures, deposit-forming organisms, mineral inclusions, characteristic transition changes, secondary processes and mineral compn. is presented.
A. A. Bochtling

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

KRESTOVNIKOV, V. N.

"On the Stratigraphy of the Gigantella Beds of the Karsakpai Region, Central
Kazakhstan," Dokl. AN SSSR, 28, No.3, 1940

KRESTOVNIKOV, V. N.

USSR/Geology
Petrology

Jul 47

"New Data on the Devonian Deposits of the Southeastern Part of the Russian Platform,"
K. R. Chepikov, V. N. Krestovnikov, A. G. Kuznetsov, 3 $\frac{1}{2}$ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Results of studies conducted on core samplings at BuguruslanNeft Trust, taken by Volga-Bashkir Expedition of Academy of Sciences, USSR. reports that Devonian deposits in Buguruslan region vary greatly from devonian deposits in other regions. Submitted by Academician D. S. Belyankin, 29 Jan 1947.

PA 60T25

KRESTOVNIKOV, V. N.; KARPICHEV, V. S.

Zigan Valley - Paleontology

Fauna and stratigraphy of the Etrooungt beds along the Zigan River (Southern Urals).
Trudy Inst. geol. nauk AN SSSR no. 6, 1948

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED

SAPOZHNIKOV, D.G.; SHATSKIY, N.S., redaktor; KRESTOVNIKOV, Y.N., redaktor;
POPOVA, S.T., redaktor; KARPOV, I.I., tekhnicheskiy redaktor.

Copper-bearing sandstone in the western region of central Kazakhstan.
Trudy Inst.geol.nauk no.93:1-122 '48. (MLRA 9:8)

1. Chlen-korrespondent akademii nauk SSSR (for Shatskiy)
(Kazakhstan--Geology, Stratigraphic) (Kazakhstan--Copper ores)

А.А.Евдокимов
PLOTNIKOV, M.A.; YANISHEVSKIY, M.F. [deceased]; ~~TRISTOVSKIY, M.F.~~ kandidat
geologo-mineralogicheskikh nauk, otvetstvennyy redaktor; SABLINA, T.B.,
redaktor izdatel'stva; MEVRAYEVA, N.A., tekhnicheskiy redaktor.

[Fauna of the lower Carboniferous deposits in the border zone of
Dzungaria. Vol.2, no.2 of "Border zone of Dzungaria" by V.A.Obruchev.]
Fauna nizhnokamennougol'nykh otlozhenii pograničnoi Dzhungarii;
vol.2, no.2 of "Pogranichnaia Dzhungariia" by V.A.Obruchev. Moskva.
Izd-vo Akad. nauk SSSR, 1953. 58 p. 9 tables. (Akademiia nauk SSSR.
Mongol'skaia komissia. Trudy no.44). (MLRA 10:7)
(Dzungaria--Paleontology, Stratigraphic)

3(0)

AUTHORS: Nagibina, M. S., ~~Krestovnikov, V. K.~~, SOV/20-123-5-39/50
Chzhan Bu-Chun', Gatinskiy, Yu. G.

TITLE: Recent Discoveries of Paleozoic Fauna in the Malyy Khingan
Mountain Range (China) (Novyye nakhodki paleozoyskoy fauny v
khrebtte Malyy Khingan (kitayskiy))

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5,
pp 910 - 913 (USSR)

ABSTRACT: The Sovetsko-Kitayskaya Amurskaya ekspeditsiya (Soviet-
Chinese-Amur Expedition) has found a fauna in the undifferentia-
ted volcanic and sedimentary rocks in the northern part of
the Malyy Khingan and the Il'khuri-Alin'. This fauna allowed
subdivision of this suite of rocks. The suite lies with an
angular unconformity on folded crystalline rocks of the Upper
Archaic, Proterozoic, and Lower Paleozoic. It is intruded by
igneous rock of various compositions. In the sedimentary
sequence, Silurian Lower and Middle Devonian, and Permian
strata could be determined. The definitely Silurian rocks
are distributed in Malyy Khingan and in the southern part of
Il'khuri-Alin'. They are related to the Silurian sedimentary

Card 1/3

Recent Discoveries of Paleozoic Fauna in the Malyy Khingan SOV/20-123-5-39/50
Mountain Range (China)

rocks of the Sukhotinskiy anticlinorium on the left side of the Amur River (USSR). They are further exposed along the highway between the cities of Kheykhe and Nun'tsyan. The Silurian beds are many kilometers thick and are entirely similar to the faunally characterized Upper Silurian rocks of the Nora River discharge region (USSR). Devonian sedimentary rocks in this area have been known since 1942 (Refs 4,5). Also the authors found a Devonian fauna in the Malyy Khingan (1957). The rocks lie unconformably on Silurian strata and outcrop in 2 areas. They are faulted and intruded by granite bodies (Erchzhanskiy stock). Chinese geologists under the leadership of Chzhao Guy-san' divide the Devonian into 2 suites: a) Nitszyukhe (1500 m thick) and b) Kholunmen (800-900 m thick). A fauna was found in the latter suite on Mount Vankholu and in the vicinity of the village of Din'shuy. The brachiopods were identified by V. N. Krestovnikov, the trilobites by Z. A. Maksimova, and the pelecypods by I. M. Krasilova. On the basis of general fauna character, the lower part of the Kholunmen suite may belong to the upper part of the Coblenzian (Lower Devonian). The forms of the Din'shuy rocks have the

Card 2/3

Recent Discoveries of Paleozoic Fauna in the Malyy Khingan SOV/20-123-5-39/50
Mountain Range (China)

character of Middle Coblenzian stage. The higher horizons of this stage and yet higher the lower horizons of the Eifelian stage (Middle Devonian) could be recognized through fossil remains (Fig 1). The Nitszyukhe suite is designated Gedinian by the authors. Professor Yuy Tszyan'chzhan collected fossils on the Kheykhe-Nun'tszyan' highway in the south in 1950; he identified them as Permian-Carboniferous. Sedimentary rocks with Permian faunal characteristics were only found in the vicinity of Mount Diguan'shan' (Petushinyy greben'). They are 300 m thick. Here pelecypods (identified by L. L. Khalfin) were found. The Permian beds lie discordantly on folded Middle Paleozoic and older strata. They are lacustrine and marine, deposited in local basins. There are 2 figures and 5 references, 3 of which are Soviet.

ASSOCIATION: Geologicheskii institut Akademii nauk SSSR (Geologic Institute
Academy of Sciences USSR)
PRESENTED: August 2, 1958, by N. S. Shatskiy, Academician
SUBMITTED: July 4, 1958

Card 3/3

NAGIBINA, M.S.; KRESTOVNIKOV, V.N.; CHZHAN BU-CHUN' [Chang Pu-Chiung];
GATINSKIY, Yu.G.

Recent finds of Paleozoic fauna on the Lesser Khingan Range
(China). Dokl. AN SSSR 123 no.5:910-913 D '58. (MIRA 12:1)

1. Geologicheskii institut AN SSSR. Predstavleno akademikom
N.S. Shatskim.
(Khingian Range, Lesser--Paleontology, Stratigraphic)

LYASHENKO, Aleksey Ivanovich; KRESTOVNIKOV, V.N., red.;

[Atlas of brachiopoda and the Devonian stratigraphy of the
central provinces of the Russian Platform]Atlas brakhiopod
i stratigrafiia devonskikh otlozhenii tsentral'nykh oblastei
Russkoi platformy. Pod red. V.N.Krestovnikova. Moskva, Gos.
nauchno-tekh.izd-vo nef. i gorno-toplivnoi lit-ry, 1959.
450 p. (MIRA 15:11)

(Russian Platform--Geology, Stratigraphic)
(Russian Platform--Brachiopoda, Fossil)

NAGIBINA, M.S.; KRESTOVNIKOV, V.N.

Diagram of the Paleozoic stratigraphy of the vicinity of
Zeya. Izv.vys.ucheb.zav.; geol.i razv. 2 no.11:3-19
N '59. (MIRA 13:6)

1. Geologicheskii institut AN SSSR.
(Zeya—Geology, Stratigraphic)

KRESTOVNIKOV, Valerian Nikolayevich; MENNER, V.V., otv red.; CHEPIKOVA,
I.M., red. izd.-va; JIAUT, V.G., tekhn. red.

[Phyllocardia, the new crustaceans from Paleozoic deposits of the
Russian Platform, the Urals, the Timan Ridge, and the Donets Basin]
Novye rakoobraznye fillokaridy paleozoiz russkoi platformy, Urala,
Timana i Donbassa. Moskva, Izd-vo Akad. nauk SSSR, 1961. 66 p.
(Akademiia nauk SSSR. Geologicheskii institut. Trudy, no. 52).

(MIRA 14:12)

(Phyllocardia)

ANDRONOV, Sergey Mitrofanovich; KRESTOVNIKOV, V.N., otv.red.; KOTLYAREVSKAYA, P.S., red.izd-va; DOROKHINA, I.N., tekhn.red.; GUS'KOVA, O.A., tekhn.red.

[Some representatives of the family Pentameridae from Devonian sediments in the vicinity of Severouralsk] Nekotorye predstaviteli semeistva Pentameridae iz devonskikh otlozhenii okrestnostei g. Severoural'ska. Moskva, Izd-vo Akad.nauk SSSR, 1961. 135 p. 22 plates. (Akademiia nauk SSSR. Geologicheskii institut. Trudy, no.55).

(MIRA 15:3)

(Severouralsk region—Brachiopoda, Fossil)

KHACHATRYAN, R.O.; KRESTOVNIKOV, V.N.; LIPINA, O.A.; ROSTOVTSEVA, L.F.

Tournaisian-Visean boundary deposits in the Ryauzyak Valley (Southern
Urals). Dokl. AN SSSR 140 no.4:919-921 O '61. (MIRA 14:9)

1. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR i
Geologicheskiiy institut AN SSSR. Predstavleno akademikom D.V.
Nalivkinym.

(Ryauzyak Valley--Geology, Stratigraphic)

ROZMAN, Khana Solomonovna; KRESTOVNIKOV, V.M., otv.red.;
BEZNEKOVA, G.A., otv.red.; ZHURAVLEV, V.S., red.izd-va;
MAKOGONOVA, I.A., tekhn.red.

[Stratigraphy and brachiopods of the Famennian stage of
the Mugodzhar Hills and adjacent regions] Stratigrafiia
i brachiopody famenskogo iarusa mugodzhar i smezhnykh
raionov. Moskva. Izd-vo Akad.nauk SSSR, 1962. 195 p.
31 plates. (Akademiia nauk SSSR. Geologicheskii institut.
Trudy, no.50). (MIRA 15:10)
(Mugodzhar Hills region--Geology, Stratigraphic)
(Mugodzhar Hills region--Rhynchonellacea, Fossil)

KRESTOVNIKOV, V.N.; LIPINA, O.A.; MKRTCHYAN, O.M.; CHIZHOVA, V.A.

The depression-type section of the upper Devonian carbonate stratum of the Birska saddle Dokl. AN SSSR 142 no.6:1365-1368 F '62.
(MIRA 15:2)

1. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR, Institut geologicheskikh nauk AN SSSR i Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut (Birska Region—Geology, Stratigraphic)

KRESTOVNIKOVA, G.S.

VELIKORETSKIY, A.N.; KRESTOVNIKOVA, G.S.

Penicillin therapy in acute appendicitis. Sovet. med. no.
10:8-10 Oct. 1950. (CIML 20:1)

1. Of the Second Hospital Surgical Clinic (Head -- Prof. A. N. Velikoretskiy), Moscow Medical Institute of the Ministry of Public Health RSFSR.

OUVAROVA, V. M., KRESTOVNIKOVA, T. I., MYLTSEVA, V. A. and ROMANOVSKAYA, K. M.
Sci. Res. Inst. Cinephotography.

Traitement des Emulsion NIKFI Pour Recherches Nucleaires."

paper presented at the Second Intl. Colloquium on Corpuscular Photography.
Montreal, 21 Aug - 7 Sep 1958.

Encl: B-3,114,647.

KRESTOVNIKOVA, T. I., and UVAROVA, V. M.

"Some ideas about the hypersensitization mechanism of nuclear track emulsions"

Fourth International Colloquium on Photography (Corpuscular) - Munich, West
Germany, 3-8 Sep 62

KRESTOVNIKOVA, T. I., and UVAROVA, V. M.

"Research on various treatment procedures for ER NIFKI emulsions glued on glass"

Fourth International Colloquium on Photography (Corpuscular) - Munich, West
Germany, 3-8 Sep 62

KRESTOVNIKOVA, T.I.; UVAROVA, V.M.

Analyzing the methods for the processing of BR type supportless
emulsion layers glued to glass developed by the Scientific
Research Institute of Motion Pictures and Photography. Zhur.nauch.
i prikl.fot. i kin. 9 no.2:92-95 Mr-Ap '64. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI).

KRESTOVNIKOVA, T.S.

Clinical aspects of "hourglass" tumors of the spinal cord.
Vop. klin. pat. no.2:18-23 '61 (MIRA 16:12)

1. Iz neyrokhirurgicheskogo otdeleniya (zav. - starshiy
nauchnyy sotrudnik V.Ye.Bryk) Moskovskogo oblastnogo nauchno-
issledovatel'skogo klinicheskogo instituta imeni Vladimirskogo.